

### Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

#### Listing of Claims

26. (Currently Amended) A ~~computer program product comprising~~ system for storing life science information, the system comprising:

an electronic database for storing a plurality of case frames ~~statements~~, each case frame ~~statement~~ comprising[[:]]:

[[an]] at least two ~~first~~ object identifiers; and

a relationship connector;~~;~~and

~~————— a second object identifier~~ wherein the relationship connector relates two of the at least two object identifiers to each other and is based on a life science ontology; and

an inference engine for managing the addition of new data to the database by instantiating a subset of the plurality of case frames to represent the new data and assuring the instantiated case frames conform to the life science ontology, thereby creating new life science assertions in the database.

27. (Currently Amended) The ~~product~~ system of claim 26, wherein a set of said case frames ~~statements~~ define a biological function.

28. (Currently Amended) The ~~product~~ system of claim 27, wherein the biological function comprises a chemical reaction.

29. (Currently Amended) The ~~product~~ system of claim 27, wherein the biological function comprises transport.

30. (Currently Amended) The ~~product~~ system of claim 27, wherein the biological function comprises digestion of a biomolecule.

31. (Currently Amended) The ~~product~~ system of claim 26, wherein at least one of the ~~first and second~~ at least two object identifiers identifies a biomolecule.

32. (Currently Amended) The ~~product~~ system of claim 26, wherein at least one of the ~~first and second~~ at least two object identifiers identifies a biological function.

33. (Currently Amended) The ~~product~~ system of claim 26, wherein at least one of the ~~first and second~~ at least two object identifiers identifies a relationship connector.

34. (Currently Amended) The ~~product~~ system of claim 26, wherein ~~[[a]]~~ the relationship connector represents an identity relationship.

35. (Currently Amended) The ~~product~~ system of claim 26, wherein ~~[[a]]~~ the relationship connector represents a product relationship.

36. (Currently Amended) The ~~product~~ system of claim 26, wherein ~~[[a]]~~ the relationship connector represents a substrate relationship.

37. (Currently Amended) The ~~product~~ system of claim 26, wherein ~~[[a]]~~ the relationship connector represents an enzymatic relationship.

38. (Currently Amended) The ~~product~~ system of claim 26 further comprising a graphical user interface configured to permit a user to query the database ~~at least~~ based on the relationship connector, ~~between biological object identifiers.~~

39. (Currently Amended) The ~~product~~ system of claim 26 further comprising a data input interface configured to accept user instructions relating to the creation of a new ~~permit a user to create case~~ frame statement.

40. (Currently Amended) The ~~product~~ system of claim 26 further comprising an access manager configured to restrict access ~~of a user~~ to one or more portions of the electronic database.

92. (New) The system of claim 26 wherein the inference engine further modifies the selected case frames such that the selected case frames more accurately represent the new data.

93. (New) The system of claim 92 wherein the modifications comprise one or more of the addition of new fields, the addition of new relationships, and the addition of metadata.

94. (New) The system of claim 93 wherein the metadata comprises one or more of the source of the new data, the date the new data was received, the time the new data was received, and the experimental conditions under which the new data was created.

95. (New) The system of claim 26 further comprising a harmonization and transfer module for interfacing with multiple disparate sources of life science data and receiving the new data.

96. (New) The system of claim 95 wherein the received data is received in XML format.

97. (New) the system of claim 95 wherein the harmonization and transfer module further translates the received data into a data format compatible with the case frames.

98. (New) The system of claim 41 further comprising a discovery environment for displaying pathways among the plurality of case frames, the pathways representing causal relationships among the case frames.

99. (New) The system of claim 41 further comprising a managed account interface for attributing access restrictions to one or more case frames in the database.

100. (New) The system of claim 99 wherein the access restrictions comprise one or more of public access rights, subscription-based access rights, and proprietary access rights.

101. (New) A system for storing life science data, the system comprising:  
    an electronic database for storing a plurality of case frames, each case frame comprising:  
        at least two object identifiers; and  
        a relationship connector, wherein the relationship connector relates two of the at least two object identifiers to each other and is based on a life science ontology; and  
    wherein the database comprises case frames representing protein phosphorylation reactions, gene expressions, and transcriptional activations.

102. (New) The system of claim 101 wherein the case frame representing protein phosphorylation reactions comprises a reactant, a product, and a catalyst.

103. (New) The system of claim 101 wherein the case frame representing gene expressions comprises a gene and a gene product.

104. (New) The system of claim 101 wherein the case frame representing transcriptional activation comprises a gene expression, an activation, and a transcriptional activator.

105. (New) The system of claim 101 further comprising a harmonization and transfer module for interfacing with multiple disparate sources of life science data and receiving new data for inclusion in the database.

106. (New) The system of claim 105 further comprising an inference engine for managing the addition of the new data by instantiating a subset of the plurality of case frames to represent the new data and assuring the instantiated case frames conform to the life science ontology, thereby creating life science assertions in the database.